



LIST OF CONTENTS

VOLUME 32, NUMBER 1

1994

Contents

**L. Lang,
S. Doyen-Lang,
A. Charlier, and
M. F. Charlier**

**K. Lafdi and
A. Oberlin**

**A. Guerrero-Ruiz and
I. Rodriguez-Ramos**

**D. Michel,
M. Pruski, and
B. C. Gerstein**

**M. Pruski,
B. C. Gerstein, and
D. Michel**

**P. Salatino and
F. Zimbardi**

**K. Lafdi and
A. Oberlin**

**R. B. Mathur,
J. Mittal,
O. P. Bahl, and
N. K. Sandle**

**H. N. Lei,
A. Métrot, and
M. Troyon**

**J. R. Kershaw and
P. J. Smart**

**I. Bautista-Toledo,
J. Rivera-Utrilla,
M. A. Ferro-García, and
C. Moreno-Castilla**

**I. A. Uodod,
H. B. Orman, and
V. K. Genchel**

1 Editorial

3 Calculation of the phonon spectrum and the superconducting critical temperature of KC_2

11 An attempt to characterize and elaborate anisotropic pitches and derived carbon fibers. Part I: Preparation by bubbling

23 Oxydehydrogenation of ethylbenzene to styrene catalyzed by graphites and activated carbons

31 NMR of petroleum cokes I: Relaxation studies and quantitative analysis of hydrogen by magnetic resonance

41 NMR of petroleum cokes II: Studies by high resolution solid state NMR of 1H and ^{13}C

51 A fractal approach to the analysis of low-temperature combustion rate of a coal char. II: Model development

61 An attempt to characterize and elaborate anisotropic pitches and derived carbon fibers. Part II: Preparation by separation

71 Characteristics of $KMnO_4$ -modified PAN fibres—its influence on the resulting carbon fibres' properties

79 Scanning tunneling microscopy analysis of a glassy carbon heat treated at $2500^\circ C$

85 Extraction of coal-tar pitch and the effect on carbonization

93 Influence of the oxygen surface complexes of activated carbons on the adsorption of chromium ions from aqueous solutions: Effect of sodium chloride and humic acid

101 The sodium-graphite system under high-pressure conditions: The comparison with the lithium-graphite system

A. Oya, M. Kimura, T. Sugo, A. Katakai, Y. Abe, T. Iizuka, N. Makiyama, A. Linares-Solano, and C. Salinas-Martínez de Lecáa	107	Antibacterial activated carbon fiber derived from methyl methacrylate-grafted phenolic resin fiber
M. Matsumoto, T. Hashimoto, K. Murata, and S. Goto	111	Surface modification of carbon whiskers by oxidation treatment
B. T. Kelly and T. D. Burchell	119	The analysis of irradiation creep experiments on nuclear reactor graphite
G. S. Rellick and P. M. Adams	127	TEM studies of resin-based matrix microstructure in carbon/carbon composites
S. Lee, H. Permana, and K. Y. S. Ng	145	Observation by scanning tunneling microscopy of the morphology change of Pt/HOPG after NO-CO reaction
S.-I. Pyun, E.-J. Lee, T.-Y. Kim, S.-J. Lee, Y.-G. Ryu, and C.-S. Kim	155	Role of surface oxides in corrosion of carbon black in phosphoric acid solution at elevated temperature
S.-I. Pyun, Y.-G. Ryu, and S.-H. Choi	161	Corrosion behaviour of platinum-catalyzed carbon in phosphoric acid solution
R.-Y. Qin and J.-B. Donnet	165	Influence of thermal and surface treatments on surface properties of pitch-based carbon fibers studied by inverse gas chromatography
<i>Letters to the Editor</i>		
I. Mochida, S. Kowano, S. Kisamori, H. Fujitsu, and T. Maeda	175	Reduction of low concentration NO with NH ₃ over pitch based active carbon fiber in humid air at ambient temperature
T. Ohte, A. Kojima, M. Katoh, K. Kamata, and S. Ohtani	177	Surface characterization of carbon surfaces by cold plasma treatment
A. N. Chuvyrov, Z. K. Kuvatov, and S. M. Kogarmanov	181	Pyrolysis of dehydrochlorinated PVC: temperature and pressure dependence of conductivity
J. B. Donnet, E. Papirer, W. Wang, and H. F. Stoeckli	185	XPS determination of surface nitrogen species on PAN carbon fibres

D. Cho, J. Y. Lee, and B. I. Yoon	187 The effect of oxidized polyacrylonitrile fiber on the inertia friction properties of carbon/carbon composites
	189 Carbon Calendar

VOLUME 32, NUMBER 2

1994

Contents

H. Fujimoto, A. Mabuchi, K. Tokumitsu, T. Kasuh, and N. Akuzawa	191 Editorial
J.-B. Donnet, W.-D. Wang, A. Vidal, and M.-J. Wang	193 Effect of crystallite size on the chemical compositions of the stage I alkali metal-graphite intercalation compounds
J. Stárek, A. Zukal, and J. Rathouský	199 Observation of plasma-treated carbon black surfaces by scanning tunneling microscopy
L. M. Manocha	207 Comparison of the adsorption of humic acids from aqueous solutions on active carbon and activated charcoal cloths
M. Turpin, T. Cheung, and B. Rand	213 The effect of heat treatment temperature on the properties of polyfurfuryl alcohol based carbon-carbon composites
M. Miki-Yoshida, R. Castillo, S. Ramos, L. Rendón, S. Tehuacanero, B. S. Zou, and M. José-Yacamán	225 Controlled stress, oscillatory rheometry of a petroleum pitch
G. Q. Lu and D. D. Do	231 High resolution electron microscopy studies in carbon soots
G. S. Szymański, G. Rychlicki, and A. P. Terzyk	247 Comparison of structural models for high-ash char gasification
S.-H. Yoon, Y. Korai, I. Mochida, and I. Kato	265 Catalytic conversion of ethanol on carbon catalysts
S.-H. Yoon, Y. Korai, and I. Mochida	273 The flow properties of mesophase pitches derived from methylnaphthalene and naphthalene in the temperature range of their spinning
J.-C. Charlier, X. Gonze, and J.-P. Michenaud	281 Assessment and optimization of the stabilization process of mesophase pitch fibers by thermal analyses
	289 First-principles study of the stacking effect on the electronic properties of graphite(s)

J. L. White, M. K. Gopalakrishnan, and B. Fathollahi	301	A processing window for injection of mesophase pitch into a fiber preform
Z. Weishauptová, J. Medek, and Z. Vaverková	311	Study of the porosity of mesophase and its carbonization products
R.-Y. Qin and J.-B. Donnet	323	Study of carbon fiber surfaces by scanning tunneling microscopy, part III. Carbon fibers after surface treatments
T. Watanabe, Y. Ohtsuka, and Y. Nishiyama	329	Nitrogen removal and carbonization of polyacrylonitrile with ultrafine metal particles at low temperatures
<i>Review Article</i>		
M. Monthoux and J. G. Lavin	335	The graphitizability of fullerenes and related textures
<i>Letters to the Editor</i>		
J. P. Armistead, T. M. Keller, and S. B. Sastri	345	Structure and property changes during pyrolysis and an acetylene-terminated resin
P. Davini	349	Molar heat of adsorption on active carbons in close relation to their surface characteristics
H. Preiss and W. Kant	351	A rheological and thermal characterization of carbonaceous hydrogel produced from pitch
R. N. Gimayev, Z. Kh. Kuvatov, and S. M. Kagamanov	354	Effect of pressure on the electrical conductivity of pyrolysed petroleum pitch
H. Oda, D. Tateisi, K. Esumi, and H. Honda	355	The formation of porous carbon materials from carbonaceous gel
A. T. Balaban, D. J. Klein, and X. Liu	357	Graphite cones
H. Hatori, Y. Yamada, and M. Shiraishi	359	Bursting of graphitized polyimide films through the liberation of included nitrogen
V. M. Linkov, R. D. Sanderson, and G. K. Ivakhuk	361	Microporous carbon layer coated on carbon membranes
X. F. Zhang, X. B. Zhang, G. Van Tendeloo, and G. Meijer	363	“Harmless” carbon tubes around “dangerous” asbestos fibres
M. Berhauer and K. J. Huttinger	367	Mechanism of the accelerating effect of carbon dioxide in pitch pyrolysis
Y. Hirohata, M. Okita, T. Hino, and T. Yamashina	369	Desorption behavior for H_2O from isotropic graphite dipped in water

**D. Mehandjiev,
E. Bakayrova, and
R. Nicholov**

372 Micropore size distribution by a simplified equation
375 Carbon Calendar

VOLUME 32, NUMBER 3

1994

Contents

**H. A. Katzman,
P. M. Adams,
T. D. Le, and
C. S. Hemminger**

**M. Liu and
J. M. Cowley**

**A. R. Chughtai,
S. A. Gordon, and
D. M. Smith**

**T. Budinova,
N. Petrov,
S. Duber, and
E. Shebestova**

**D. Cazorla-Amorós,
A. Linares-Solano,
C. Salinas-Martínez
de Lecáa, and
F. Kapteijn**

**M. S. Seehra,
A. S. Pavlovic,
V. S. Babu,
J. W. Zondlo,
P. G. Stansberry, and
A. H. Stiller**

F. Cataldo

**T. A. Braymer,
C. G. Coe,
T. S. Farris,
T. R. Gaffney,
J. M. Schork, and
J. N. Armor**

**K. E. Yoon,
E. S. Lee,
Y. Korai,
I. Mochda,
K. Yanagida, and
K. Tate**

377 Obituary: Brian Thomas Kelly

379 Characterization of low thermal conductivity PAN-based carbon fibers

393 Structures of the helical carbon nanotubes

405 Kinetics of the hexane soot reaction with $\text{NO}_2/\text{N}_2\text{O}_4$ at low concentration

417 EPR investigation of oxidized anthracite

423 Assessment of the CO_2 -carbon gasification catalyzed by calcium. A transient isotopic study

431 Measurements and control of anisotropy in ten coal-based graphites

437 Photochlorination of C_{60} and C_{70} fullerenes

445 Granular carbon molecular sieves

453 Comparison of mesophase pitches derived from C8 and C9 aromatic hydrocarbons

**D. Petitjean,
M. Klatt,
G. Furdin, and
A. Hérold**

**T. Nakajima and
Y. Matsuo**

**P. E. Nolan,
D. C. Lynch, and
A. H. Cutler**

**M. Zayat,
D. Davidov, and
H. Selig**

**J. Cao,
A. N. Buckley, and
L. J. Lynch**

**B. T. Kelly and
T. D. Burchell**

**S. Subramoney,
R. S. Ruoff,
D. C. Lorents,
B. Chan,
R. Malhotra,
M. J. Dyer, and
K. Parvin**

**Z.-M. Wang,
N. Shindo,
Y. Otake, and
K. Kaneko**

**S. Hazourli,
G. Bonnecaze, and
M. Astruc**

**P. Ehrburger,
F. Rabillaud, and
J. Dentzer**

**Q.-L. Zhuang,
T. Kyotani, and
A. Tomita**

**V. V. Avdeev,
L. A. Monyakina, and
I. V. Nikol'skaya**

**M. V. Ellacott,
L. S. K. Pang,
L. Prochazka,
M. A. Wilson,
J. D. Fitz Gerald, and
G. H. Taylor**

461 Exfoliation exothermique des composés d'insertion du carbone contenant de l'acide perchlorique

469 Formation process and structure of graphite oxide

477 Catalytic disproportionation of CO in the absence of hydrogen: Encapsulating shell carbon formation

485 Fluorination of carbon fibers by halogen fluorides

493 Measurement of an intrinsic softening temperature for coal-tar pitch by proton magnetic resonance thermal analysis

499 Structure-related property changes in polycrystalline graphite under neutron irradiation

507 Magnetic separation of GdC_2 encapsulated in carbon nanoparticles

515 Enhancement of NO adsorption on pitch-based activated carbon fibers by dispersion of CU-doped $\alpha\text{-FeOOH}$ fine particles

523 Influence de divers traitements sur les groupements oxygènes superficiels et le potentiel d'un charbon actif en grains

Letters to the Editor

537 Effect of chlorine on the oxidation rate of carbon fibres

539 The change of TPD pattern of O_2 -gasified carbon upon air exposure

541 The potentiometric investigations of graphite hydrogen-sulfate chemical synthesis (oxidizer- $(\text{NH}_4)_2\text{S}_2\text{O}_8$)

542 Composition of cathode deposits during fullerene production by carbon arc plasma

545 Carbon Calendar

*Contents**Papers presented at the 21st Biennial Conference on Carbon, Buffalo, NY, June 13-18, 1993*

G. Collin and B. Bujnowska 547 Co-carbonization of pitches with coal mixtures for the production of metallurgical cokes

G. B. Neighbour and B. McEnaney 553 Creep and recovery in graphites at ambient temperature: An acoustic emission study

N. Koprinarov, M. Konstantinova, and G. Pchelarov 559 Growth of plasma pyrolytic carbon

K. Kawamura, S. Shiono, and T. Watabe 563 Feature of combustion and morphology of soot produced from a cure mixture of NH_4ClO_4 /resin

G. G. Tibbets, C. A. Bernardo, D. W. Gorkiewicz, and R. L. Alig 569 Role of sulfur in the production of carbon fibers in the vapor phase

M. Suzuki 577 Activated carbon fiber: Fundamentals and applications

Regular Articles

H. Preiss, G. Lischke, R. Eckelt, H. Miessner, and K. Meyer 587 Preparation of carbon catalysts by hydrothermal treatment of a carbonaceous hydrogel

R. Fu, H. Zeng, and Y. Lu 593 Studies on the mechanism of the reaction of activated carbon fibers with oxidants

G. Furdin, D. Begin, J. F. Mareche, D. Petitjean, E. Alain, and M. Lelaurain 599 Some aspects of carbonization of mixtures containing coal tar pitch and graphite FeCl_3 compounds

W.-C. J. Wei and T.-M. Wu 605 Oxidation of carbon/carbon composite coated with $\text{SiC}-(\text{Si/ZrSi}_2)-\text{ZrSi}_2$

M. Shioya and A. Takaku 615 Rotation and extension of crystallites in carbon fibers by tensile stress

J. R. Simms and C. Q. Yang 621 Infrared spectroscopy studies of the petroleum pitch carbon fiber-II. The distribution of the oxidation products between the surface and the bulk

T. Kyotani, H. Yamada, N. Sonobe, and A. Tomita 627 Heat treatment of polyfurfuryl alcohol prepared between taeniolite lamellae

M. Inagaki, Y. Hishiyama, and Y. Kaburagi	637	Effect of heating rate during carbonization on graphitization of carbon films derived from aromatic polyimides
A. K. Stark, L. A. Berglund, M. Tagawa, and N. Ohmae	641	Effect of atomic oxygen on the mechanical properties of highly graphitized carbon fibers
Y. Hishiyama, M. Nakamura, Y. Nagata, and M. Inagaki	645	Graphitization behavior of carbon film prepared from high modulus polyimide film: Synthesis of high-quality graphite film
J. A. Newell, D. K. Rogers, D. D. Edie, and C. C. Fain	651	Direct carbonization of PBO fiber
T. J. Bandosz, K. Putyera, J. Jagiello, and J. A. Schwarz	659	Study of carbon-smectite composites and carbons obtained by in situ carbonization of polyfurfuryl alcohol
K. Yamada and A. B. Sawaoka	665	Very small spherical crystals of distorted diamond found in a detonation product of explosive/graphite mixtures and their formation mechanism
P. Vinke, M. van der Eijk, M. Verbree, A. F. Voskamp, and H. van Bekkum	675	Modification of the surfaces of a gas-activated carbon and a chemically activated carbon with nitric acid, hypochlorite, and ammonia
J. Jagiello, T. J. Bandosz, and J. A. Schwarz	687	Study of carbon microstructure by using inverse gas chromatography
K. Gergova, N. Petrov, and S. Eser	693	Adsorption properties and microstructure of activated carbons produced from agricultural by-products by steam pyrolysis
V. R. Deitz and C. J. Karwacki	703	Chemisorption of cyano-containing vapors by metal-ligand structures adsorbed by activated carbon
P. Scharff, W. Bischof, S. Ebinal, C. Ehrhardt, R. Gerken, V. Kaiser, F. Menzel, and C. Tanke	709	Oxidation of buckminsterfullerene C_{60} in brönsted-acids
K. Kogure, G. Sines, and J. G. Lavin	715	Structural studies of postcreep, PAN-based, carbon filaments
D. F. Pedraza and J. Koike	727	Dimensional changes in grade H-451 nuclear graphite due to electron irradiation

**P. G. Klemens and
D. F. Pedraza** 735 Thermal conductivity of graphite in the basal plane

**J. Rivera-Utrilla,
M. A. Ferro-García, and
C. Moreno-Castilla**

**J. M. Cowley,
M.-Q. Liu,
B. L. Ramakrishna,
T. S. Peace,
A. K. Wertsching, and
M. R. Pena**

**M. El Gadi,
C. Hérold, and
P. Lagrange**

743 Thermal desorption of chlorophenols from activated carbon. Influence of the treatment atmosphere

746 A new type of metal-fulleride structure: $C_{60}Pd_3$

749 Des doubles couches de potassium insérées dans le graphite: Synthèse de composés de stades 1, 2, 3, et 4

752 Editorial Announcement

753 Carbon Calendar

755 Errata

VOLUME 32, NUMBER 5

1994

Contents

H. P. Boehm 757 Editorial

**P. Samaras,
E. Diamadopoulos, and
G. P. Sakellaropoulos**

**V. T. Lukjanova and
R. V. Lovzova**

**M. R. Alexander and
F. R. Jones**

**M. T. Beck,
J. C. Fetzer, and
S. Kéki**

**K. Kanno,
K. E. Yoon,
J. J. Fernandez,
I. Mochida,
F. Fortin, and
Y. Korai**

759 Some aspects of the surface chemistry of carbon blacks and other carbons

771 Acid treatment of lignite and its effect on activation

777 Carbon fibers in nature

785 Effect of electrolytic oxidation on the surface chemistry of type A carbon fibres—Part I, X-ray photoelectron spectroscopy

795 Formation of PAHs and C_{60} as intermediates in the carbonization of liquid benzene and toluene upon the effect of electric discharges

801 Effects of carbon black addition on the carbonization of mesophase pitch

P. Demirev, G. Brinkmalm, J. Eriksson, P. Håkansson, R. Papaléo, R. Zubarev, and B. U. R. Sundqvist	809	Formation and sputtering of fullerenes by MeV atomic ions
L. C. Pardini and B. McEnaney	815	Effects of fibre surface treatment on fracture and acoustic emission from single and hybrid CFRC
T. Nishikawa, M. Higashiguchi, and M. Takatsu	825	Cyclic fatigue properties of isotropic graphite at elevated temperatures
I. Rannou, V. Bayot, and M. Lelaurain	833	Structural characterization of graphitization process in pyrocarbons
B. P. Russell and M. D. LeVan	845	Pore size distribution of BPL activated carbon determined by different methods
F. Durand, D. Rouby, G. Fantozzi, B. Allard, and D. Dumas	857	Characterization of the high-temperature mechanical behaviour of carbon materials
N. Petrov, M. Razvigorova, T. Budinova, and K. Siskov	867	The role of the adsorption interaction between pitch and filler in the process of baking of carbon/carbon composites
V. L. Kuznetsov, A. L. Chuvilin, E. M. Moroz, V. N. Kolomichuk, Sh. K. Shaikhutdinov, Yu. V. Butenko, and I. Yu. Mal'kov	873	Effect of explosion conditions on the structure of detonation soots: Ultradisperse diamond and onion carbon
K. A. Grant, Q. Zhu, and K. M. Thomas	883	Nitrogen release in the gasification of carbons
J. M. Martín-Martínez, L. Singoredjo, M. Mittelmeier-Hazeleger, F. Kapteijn, and J. A. Moulijn	897	Selective catalytic reduction of NO with NH ₃ over activated carbons. I: Effect of origin and activation procedure on activity
A. J. McMillan, B. C. Jones, G. R. Evans, and M. I. Darby	905	Efficient calculation of forces and stresses due to transverse impact of polycrystalline graphite beams
R. Venkateswaran, M. H. Back, and G. Scacchi	911	The dual nature of carbon: Catalyst and inhibitor

M. P. Silva, C. Santos, G. M. Gualberto, and A. Hengeltraub	921	Electrical resistivity in the <i>c</i> -axis direction of the $ZnCl_2$ graphite intercalation acceptor compound
M. De Sanctis, S. Pelletier, Y. Bienvenu, and M. Guigon	925	On the formation of interfacial carbides in a carbon fibre-reinforced aluminium composite
Yu. A. Eltekov	931	Adsorption of macromolecules of elastomers on carbon black
X. Zhou, Z. Gu, Y. Wu, Y. Sun, Z. Jin, Y. Xiong, B. Sun, Y. Wu, H. Fu, and J. Wang	935	Separation of C_{60} and C_{70} fullerenes in gram quantities by fractional crystallization
H. Peterlik, P. Fratzl, and K. Kromp	939	Pore structure of carbon/carbon composites studied by small-angle X-ray scattering
K. Azami, S. Yamamoto, and Y. Sanada	947	Kinetics of mesophase formation of petroleum pitch
A. Gupta and I. R. Harrison	953	Small-angle X-ray scattering (SAXS) in carbonized phenolic resins
I. Mochida, R. Fujiura, T. Kojima, H. Sakamoto, and K. Kanno	961	Self-adhesive carbon grains oxidatively prepared from naphthalene-derived mesophase pitch for mould of high density
C. P. Ju, K. J. Lee, H. D. Wu, and C. I. Chen	971	Low-energy wear behavior of polyacrylonitrile, fiber-reinforced, pitch-matrix, carbon-carbon composites
F. Fortin, S.-H. Yoon, Y. Korai, and I. Mochida	979	Reorganization of molecular alignment in naphthalene and methyl-naphthalene derived pitches
K. M. Thomas, J. M. Lewis, S. H. Bottrell, S. P. Dean, and J. Foulkes	991	Isotope fractionation in the synthesis of fullerenes
J. Bermejo, M. Granda, R. Menéndez, and J. M. D. Tascón	1001	Comparative analysis of pitches by extrography and thermal analysis techniques

**P. Melinon,
V. Paillard,
V. Dupuis,
J. P. Perez,
A. Perez, and
G. Panczer**

**A. G. Pandolfo,
M. Amini-Amoli, and
J. S. Killingley**

**V. A. Nalimova and
K. N. Semenenko**

**J. Madarász,
G. Pokol,
S. Kéki, and
M. T. Beck**

**K. N. Semenenko,
S. N. Klyamkin,
V. A. Nalimova, and
A. A. Karikh**

**J. Jagiełło,
T. J. Bandosz, and
J. A. Schwarz**

1011 Synthesis of diamond nanocrystallites using the low-energy cluster beam deposition; an indirect proof of small fullerene existence?

1015 Activated carbons prepared from shells of different coconut varieties

1019 Alkali metal state in graphite intercalation compounds obtained under high pressures

1023 Comparative thermogravimetric study of the air oxidation of different carbons

1025 Intercalation of hydrogen into potassium-graphite under high gas pressures

1026 Carbon surface characterization in terms of its acidity constant distribution

1029 Current By-Laws of the American Carbon Society

1030 Proposed By-Laws of the American Carbon Society

1032 Carbon Calendar

Contents

1033 Editorial

Regular Articles

**N. El Horr,
C. Bourgerette, and
A. Oberlin**

**D. D. Edie,
K. E. Robinson,
O. Fleurot,
S. P. Jones, and
C. C. Fain**

**S. Cooke and
M. M. Labes**

**S. Doyen-Lang,
L. Lang,
A. Charlier,
M. F. Charlier, and
E. McRae**

1035 Mesophase powders (carbonization and graphitization)

1045 High thermal conductivity ribbon fibers from naphthalene-based mesophase

1055 Destruction of the environmentally hazardous monochlorinated phenols via pyrolysis in an inert atmosphere

1059 Calcul des énergies et transferts de charge des mercurographites $KHgC_4$ et $RbHgC_4$ par une méthode quantique

K. Amine, T. Nakajima, and M. Motoyama	1067	Structure of fluorine-graphite intercalation compounds synthesized in gaseous and anhydrous liquid hydrogen fluoride with fluorine gas
M. Bernhauer, M. Braun, and K. J. Hüttinger	1073	Kinetics of mesophase formation in a stirred tank reactor and properties of the products—V. Catalysis by ferrocene
W. R. Hoffmann and K. J. Hüttinger	1087	Sintering of powders of polyaromatic mesophase to high-strength isotropic carbons—I. Influence of the raw material and sintering conditions on the properties of the carbon materials
A. Gschwindt and K. J. Hüttinger	1105	Sintering of powders of polyaromatic mesophase to high-strength isotropic carbons—II. Influences of the synthesis conditions of the mesophases and the preparation of the powders
F. Fortin, S. H. Yoon, Y. Korai, and I. Mochida	1119	Structure and properties of thin, slit-shaped carbon fibers prepared from mesophase pitch
J. Kouvetsakis, M. W. McElfresh, and D. B. Beach	1129	Chemical vapor deposition of highly conductive boron-doped graphite from triphenyl boron
J. Mittal, O. P. Bahl, R. B. Mathur, and N. K. Sandle	1133	IR studies of PAN fibres thermally stabilized at elevated temperatures
A. Tanaka, H. Matsumoto, C. Yamaguchi, and K. Tokumitsu	1137	Characterization of pitches by ultrasonic method—I. Apparatus and preliminary results
R. G. Cnossen, S. Lee, and A. Sacco, Jr.	1143	Carbon deposition over transition metal alloys—I. Generation of $\langle \text{NiCo} \rangle$, $\langle \text{FeNi} \rangle$, and $\langle \text{CoFe} \rangle$ phase diagrams
F. W. A. H. Geurts, R. G. Cnossen, A. Sacco, Jr., and R. R. Biederman	1151	Carbon deposition over transition metal alloys—II. Kinetics of deposition over $\langle \text{FeNi} \rangle$ and $\langle \text{FeCo} \rangle$ alloy foils
G. A. R. Bessant and P. L. Walker, Jr.	1171	Activation of anthracite: Using carbon dioxide versus air
<i>Letters to the Editor</i>		
T. Nakajima, Y. Matsuo, S. Kasamatsu, and K. Nakanishi	1177	Carbon-fluorine bonding of fullerene C_{60} fluorinated by elemental fluorine, with HF gas, under UV irradiation and in chlorofluoro-carbon solvent
Y. Wu, Y. Sun, Z. Gu, X. Zhou, Y. Xiong, B. Sun, and Z. Jin	1180	A combined recrystallization and preparative liquid chromatographic method for the isolation of pure C_{70} fullerene

S.-H. Yoon, Y. Korai, and I. Mochida	1182	Pleat structure of the mesophase pitch-based carbon fiber
G. X. Li, Y. Nishi, S. Ozeki, and K. Kaneko	1186	N_2 formation from NO over Pt-electrodeposited activated carbon fiber
Y. Murakami K. Esumi, and H. Honda	1188	Preparation of the electrocatalytic electrode coating using amphiphilic carbonaceous material containing platinum compound
	1190	Carbon Calendar

VOLUME 32, NUMBER 7

1994

Contents

N. Ikemiya, Y. Okazaki, S. Hara, and T. Nakajima	1191	Cleaved surface structures of $CuCl_2$ - and $FeCl_3$ -graphite intercalation compounds detected by atomic force microscopy
K. Yamada, G. Burkhard, K. Dan, Y. Tanabe, and A. B. Sawaoka	1197	Microstructures of carbon polymorphs formed in shocked compressed diamond powder utilizing an interaction of oblique shock waves
F. Gao, J. W. Patrick, and A. Walker	1215	Multiple CVD densification of PAN-based carbon-fibre reinforced carbon laminates
F. Kapteijn, R. Meijer, J. A. Moulijn, and D. Cazorla-Amorós	1223	On why do different carbons show different gasification rates: A transient isotopic CO_2 gasification study
A. Shindo and K. Izumino	1233	Structural variation during pyrolysis of furfuryl alcohol and furfural-furfuryl alcohol resins
D. Ugarte	1245	High-temperature behaviour of "fullerene black"
H. Fujimoto, K. Tokumitsu, A. Mabuchi, T. Kasuh, and M. Shiraishi	1249	New structural parameters for carbon: Comprehensive crystallization index and cavity index
M. Inagaki and M. Nakashima	1253	Graphite exfoliated at room temperature and its structural annealing
M. Molina-Sabio, V. Pérez, and F. Rodríguez-Reinoso	1259	Impregnation of activated carbon with chromium and copper salts: Effect of porosity and metal content

D. Loustalet, A. Oberlin, and M. Moreau	1267	Peculiar process of coal tar pitch carbonization (textural and physicochemical characterization)
J. Alcañiz-Monge, D. Cazorla-Amorós, A. Linares-Solano, S. Yoshida, and A. Oya	1277	Effect of the activating gas on tensile strength and pore structure of pitch-based carbon fibres
F. S. Cannon, V. L. Snoeyink, R. G. Lee, and G. Dagois	1285	Reaction mechanism of calcium-catalyzed thermal regeneration of spent granular activated carbon
<i>Papers presented at the Second International Conference on Carbon Blacks, Mulhouse, France, September, 1993</i>		
P. Ehrburger and P. A. Thrower	1303	Preface
J.-B. Donnet	1305	Fifty years of research and progress on carbon black
K. S. W. Sing	1311	Physisorption of gases by carbon blacks
J. Lahaye and F. Ehrburger-Dolle	1319	Mechanisms of carbon black formation. Correlation with the morphology of aggregates
F. Filliaux, R. Papoular, A. Lautié, and J. Tomkinson	1325	Inelastic neutron-scattering study of the proton dynamics in carbons and coals
F. Bonnefoy, P. Gilot B. R. Stanmore, and G. Prado	1333	A comparative study of carbon black and diesel soot reactivity in the temperature range 500–600°C—Effect of additives
E. Papirer, R. Lacroix, J.-B. Donnet, G. Nanse, and P. Fioux	1341	XPS study of the halogenation of carbon black—Part 1. Bromination
H. F. Stoeckli, D. Huguenin, and A. Laederach	1359	On the characterization of carbon blacks by various techniques
F. Ehrburger-Dolle, J. Lahaye, and S. Misono	1363	Percolation in carbon black powders
R. C. Sosa, D. Masy, and P. G. Rouxhet	1369	Influence of surface properties of carbon black on the activity of adsorbed catalase
T. Gruber, T. W. Zerda, and M. Gerspacher	1377	Raman studies of heat-treated carbon blacks

Letters to the Editor

W. P. Hoffman,
M. B. Fernandez, and
M. B. Rao 1383 Characterization of porosity in nanoporous carbons using scanning tunneling microscopy

D. Loustalet,
A. Oberlin, and
M. Moreau 1384 Comparison between two green cokes obtained from coal tar pitch and petroleum pitch

Y. Uchiyama,
S. Arakio,
H. Sano, and
K. Kobayashi 1388 Abrupt change with HTT in lattice parameter of petroleum coke and natural graphite mixed with LaB_6

J. D. Fitz Gerald,
G. H. Taylor, and
G. M. Pennock 1389 Microstructure of hydrogenated coal-tar pitches

1396 Carbon Calendar

1397 Nominations for awards invited Carbon journal prize (Pergamon)

VOLUME 32, NUMBER 8

1994

Contents

H. Darmstadt,
C. Roy, and
S. Kaliaguine 1399 ESCA characterization of commercial carbon blacks and of carbon blacks from vacuum pyrolysis of used tires

M. T. González,
M. Molina-Sabio, and
F. Rodríguez-Reinoso 1407 Steam activation of olive stone chars, development of porosity

Y. Zhang,
F. Zhang, and
G. Chen 1415 A study of phase transformation between diamond and graphite in P-T diagram of carbon

C. W. Jones and
W. J. Koros 1419 Carbon molecular sieve gas separation membranes-I. Preparation and characterization based on polyimide precursors

C. W. Jones and
W. J. Koros 1427 Carbon molecular sieve gas separation membranes-II. Regeneration following organic exposure

R. Qadeer and
J. Hanif 1433 Kinetics of zirconium ions adsorption on activated charcoal from aqueous solutions

C. Hung and
D. Kucera 1441 Graphite intercalation compound with iodine as the major intercalate

I. J. Davies and
R. D. Rawlings 1449 Mechanical properties in flexure and tension of low density carbon-carbon composites

A. W. Morawski,
K. Katucki,
M. Nakashima, and
M. Inagaki 1457 Modified carbonization of polyacrylonitrile by incorporation of FeCl_2 and $\text{Fe}(\text{NO}_3)_3$ - pore structure

T. A. Centeno and F. Stoeckli	1463	On the activation of asturian anthracite following various pretreatments
K. Kogure, G. Sines, and J. G. Lavin	1469	Microstructure and texture of pitch-based carbon fibers after creep deformation
A. Tressaud, V. Gupta, L. Piraux, L. Lozano, E. Marquestaut, S. Flandrois, A. Marchand, and O. P. Bahl	1485	Fluorine-intercalated carbon fibers—I. Structural and transport properties
M. G. Lussier, J. C. Shull, and D. J. Miller	1493	Activated carbon from cherry stones
C. A. Frysz, X. Shui, and D. D. L. Chung	1499	Effect of chemisorbed oxygen on the electrochemical behavior of graphite fibers
R. J. J. Jansen and H. van Bekkum	1507	Amination and ammoxidation of activated carbons
K. Yoshizawa, K. Okahara, T. Sato, K. Tanaka, and T. Yamabe	1517	Molecular orbital study of pyrolytic carbons based on small cluster models
A. Cuesta, P. Dhamelincourt, J. Laureyns, A. Martínez-Alonso, and J. M. D. Tascón	1523	Raman microprobe studies on carbon materials
<i>Letters to the Editor</i>		
L. Kavan and J. Kastner	1533	Carbyne forms of carbon: Continuation of the story
J. Rodriguez, F. Ruette, and J. Laine	1536	Molecular modeling of micropores in activated carbon
X. B. Zhang and S. Amelinckx	1537	On the measurements of the helix angles of carbon nanotubes
F. Ikazaki, S. Ohshima, K. Uchida, Y. Kuriki, H. Hayakawa, M. Yumura, K. Takahashi, and K. Tojima	1539	Chemical purification of carbon nanotubes by use of graphite intercalation compounds

S. Y. Cho

1542 Adsorption of chlorofluorocarbons on microporous carbon fiber

**Y. Nakayama,
H. Nagao,
I. Mochida, and
Y. Kawabuchi**

1544 Adsorption of radon on active carbon

1548 Carbon Calendar
Carbon Journal Prize (Pergamon)

I Volume 32 Contents and Author Index

